

Appendix C

Emission Offsets

Pursuant to District Regulation 2, Rule 2, Section 302, offsets are required only for permitted sources. Therefore, emission offsets will be required for the POC and NO_x, emission increases associated with S-1 Gas Turbine, S-2 HRSG, S-3 Gas Turbine, and S-4 HRSG only. Pursuant to District Regulations, emission offsets are not required for the NO_x, POC, and PM₁₀ emissions attributed to the exempt emergency generator and exempt fire pump diesel engine.

Table C-1 Emission Offset Summary

	NO _x	CO	POC	PM ₁₀	SO ₂
BAAQMD Calculated New Source Emission Increases ^a (ton/yr)	185.24	587.2	27	83.34	10.58
Proposed New Source Annual Emission Limits ^b (ton/yr)	185 ^c	588	28	83.34	10.6
Offset Requirement Triggered	Yes	N/A	Yes	No	No
Offset Ratio	1.15:1.0 ^d	N/A	1.0:1.0 ^e	N/A	N/A
Offsets Required (tons)	212.75	0	28	0	0

^asum of Gas Turbine (S-1 and S-3) and HRSG (S-2 and S-4) emission increases

^bper applicant's emission calculations

^cfor first twelve months of operation only; subsequent limit will be 123.43 tons per year, based upon an average NO_x emission concentration of 2.0 ppmvd @ 15% O₂ and an average number of start-ups per year

^dpursuant to District Regulation 2-2-302, the applicant must provide emission offsets at a ratio of 1.15 to 1.0 since the proposed facility NO_x emissions from permitted sources will exceed 50 tons per year

^epursuant to District Regulation 2-2-302, an offset ratio of 1.0:1.0 applies since the facility POC emissions are greater than 15 tons per year but less than 50 tons per year

Appendix D

Health Risk Assessment

As a result of the combustion of natural gas at the proposed Gas Turbines and HRSGs and the presence of dissolved solids (heavy metals) in the cooling tower water, the proposed Metcalf Energy Center will emit the toxic air contaminants summarized in Table 2, "Maximum Facility Toxic Air Contaminant (TAC) Emissions". In accordance with the requirements of CEQA, the BAAQMD Risk Management Policy, and CAPCOA guidelines, the impact on public health due to the emission of these compounds was assessed utilizing the air pollutant dispersion model ISCST3 and the multi-pathway cancer risk and hazard index model ACE.

The public health impact of the carcinogenic compound emissions is quantified through the increased carcinogenic risk to the maximally exposed individual (MEI) over a 70-year exposure period. A multi-pathway risk assessment was conducted that included both inhalation and noninhalation pathways of exposure, including the mother's milk pathway. Pursuant to the BAAQMD Risk Management Policy, a project which results in an increased cancer risk to the MEI of less than one in one million over a 70 year exposure period is considered to be not significant and is therefore acceptable.

The public health impact of the noncarcinogenic compound emissions is quantified through the chronic hazard index, which is the ratio of the expected concentration of a compound to the acceptable concentration of the compound. When more than one toxic compound is emitted, the hazard indices of the compounds are summed to give the total hazard index. The acute hazard index quantifies the magnitude of the adverse health affects caused by a brief (no more than 24 hours; typically 1 hour) exposure to a chemical or group of chemicals. The chronic hazard index quantifies the magnitude of the adverse health affects from prolonged exposure to a chemical caused by the accumulation of the chemical in the human body. The worst-case assumption is made that the exposure occurs over a 70-year period. Per the BAAQMD Toxic Risk Management Policy, a project with a total hazard index of less than 1.0 is considered to be not significant and the resulting impact on public health is deemed acceptable.

In anticipation of pending amendments to District Regulation 2, Rule 1 and Rule 2, a health risk screening was performed to determine the impact of diesel exhaust particulate from the standby fire pump diesel engine. Because the location of maximum impact for the diesel engine does not coincide with the locations of maximum impact for the other sources, the total combined carcinogenic risk for the facility does not exceed 1 in one million

As shown in Table D-1, the increased carcinogenic risk was found to be less than one in one million and is therefore considered to be not significant. Accordingly, the fire pump diesel engine remains exempt from District permitting requirements.

The results of the health risk assessment performed by the applicant that was reviewed and approved by the District Toxics Evaluation Section staff are summarized in **Table D-1**.

Table D-1
Health Risk Assessment Results

Source	Multi-pathway Carcinogenic Risk (risk in one million)	Non-carcinogenic Chronic Hazard Index	Non-carcinogenic Acute Hazard Index ^a
Gas Turbines, HRSGs, and Cooling Tower	0.20	0.06	0.33
Fire Pump Diesel Engine	0.89	0.0006	0.24

^aincluded for informational purposes only; the BAAQMD TRMP does not require an assessment the impact due to short-term (< 24 hour) exposure to non-carcinogenic toxic air contaminants

In accordance with the BAAQMD Toxic Risk Management Policy (TRMP), the increased carcinogenic risk and chronic hazard index attributed to this project are each considered to be not significant since they are each less than 1.0. The BAAQMD TRMP does not require an assessment the impact due to short-term (< 24 hour) exposure to non-carcinogenic toxic air contaminants, which is expressed as the acute hazard index.

Based upon the results given in Table D-1, the Metcalf Energy Center project is deemed to be in compliance with the BAAQMD Toxic Risk Management Policy.